

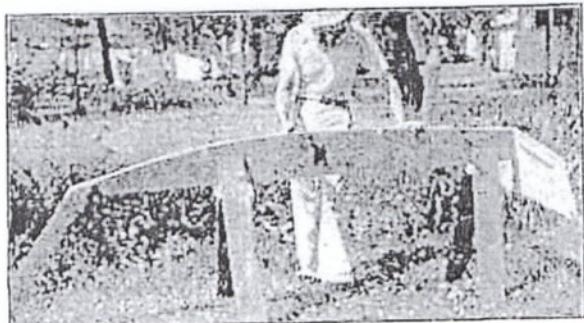
For casting or still fishing, the pram is ideal. It rows easily, sails well, and propels nicely with small outboard motors.

## "KINGFISHER"

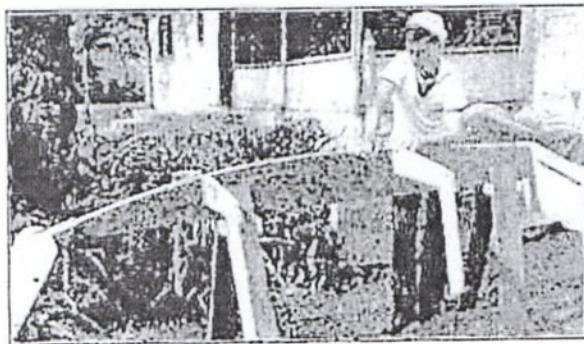
### An Easily Built 9-Foot Pram

Craft Print Project No. 75

**O**RIGINALLY developed separately by Scandinavian fishermen and Dutchmen hundreds of years ago for use upon rough open waters of the Old World, the pram reflects the qualities of these hardy seafarers, for it is exceptionally practical and useful under all conditions.

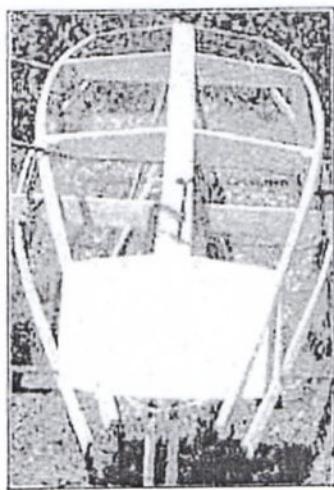


A form for the "Kingfisher" is here set up and is ready for construction work.



Putting the mould frames into place.

This modernized version of the pram, which is here called the "Kingfisher," is perhaps the most versatile craft that may be found. It rows easily, sails well, and propels nicely with small outboard motors. It weighs only 90-100 lbs. and therefore is easily handled and carried atop any auto for sport and adventure limited only by road maps. It is wide beamed and due to the commodious design its capacity is the equal of much larger boats. Casting or still fishing is easily accomplished standing upright in it. This pram will safely seat three persons. All construction details have been simplified to permit easy fabrication and material costs are easily within the reach of everyone. If the construction outlined is followed carefully, "Kingfisher" will remain leakproof permanently and be always ready for use.



To build this paragon of boats, first saw the form to shape from any 2" x 10" x 8' rough lumber and mount upon legs similar to a saw-horse at any convenient working height. Cut notches in the form as indicated

Showing bow and frame-work construction.

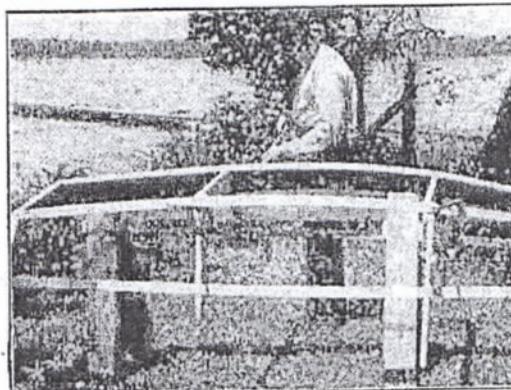
## MATERIAL LIST

Parts	Pieces	Dimensions
Resin-bonded Marine Plywood.....	2	1/4" x 48" x 36"
Transom .....	1	3/4" x 9 3/4" x 8'
Stem .....	1	3/4" x 9 3/4" x 6'
Motor Board and Frame.....	2	3/4" x 3" x 6'
Mould Frames .....	2	3/4" x 3 3/4" x 10'
Form .....	1	2" x 9 3/4" x 8'
Seats .....	1	3/4" x 11 3/4" x 12'
Chines .....	2	3/4" x 1 3/4" x 10'
Keel .....	1	3/4" x 3 3/4" x 10'
Clamps .....	2	1/2" x 1 3/4" x 10'
Mouldings .....	2	3/4" x 1 1/8" x 10'
Side Frames .....	1	3/4" x 3" x 12'
Bottom Ribs .....	2	1/2" x 1 1/2" x 10'
Seat Risers .....	2	3/4" x 1 3/4" x 10'
Skeg .....	1	3/4" x 3" x 3'
Transom Knees.....	1	3/4" x 8" x 10'

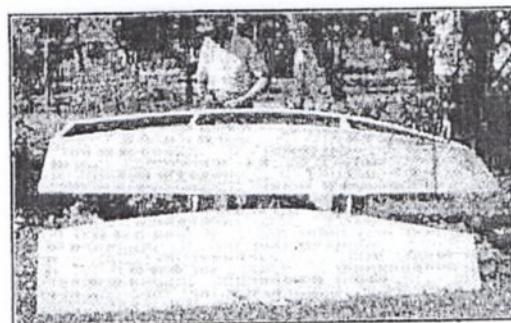
Kinds of Wood: Spruce, fir, cypress, white pine, yellow pine, hemlock, or redwood.

## FASTENINGS AND MATERIALS

- 2 1/2 Gro. 1" No. 8 f. h. screws, cadmium plated, galvanized, or brass.
- 1 Gro. 1 1/4" No. 8 f. h. screws, cadmium plated, galvanized, or brass.
- 2 Doz. 2" No. 10 f. h. screws, cadmium plated, galvanized, or brass.
- 1 Lb. 1 1/4" Shingle nails (galvanized).
- 4 Ozs. 1/4" Tacks.
- 1 Lb. Casein glue.
- 1/2 Gal. Canvas cement.
- 6 Yds. 36" width, 5 to 8-oz. Canvas or heavy cloth.
- 1 Pair Oarlocks.
- 1 Pair 6 1/2" Oars. Spruce.



Side view of framework with clamps in place.

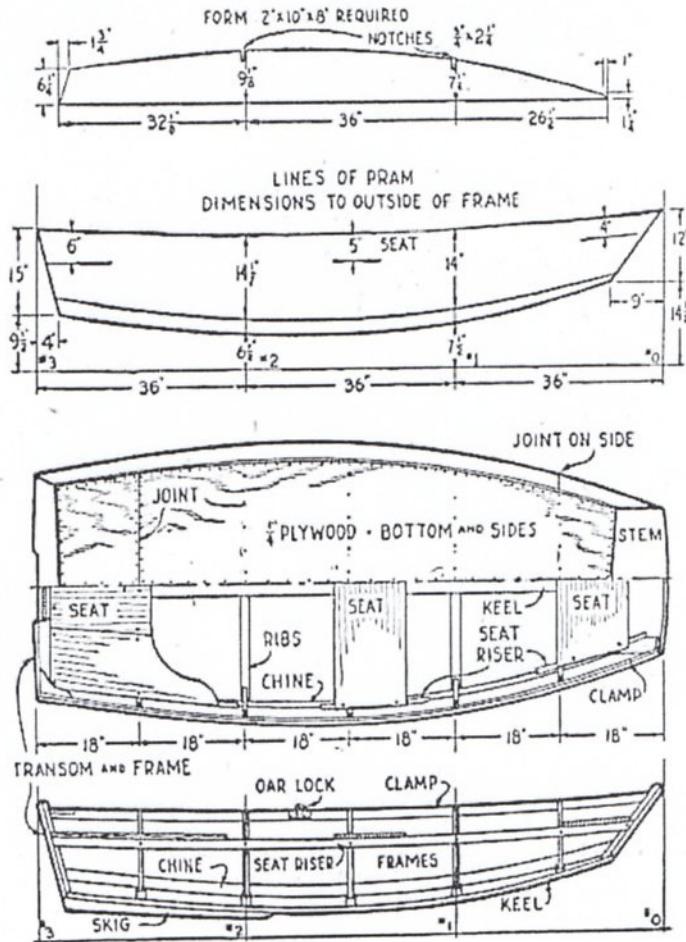


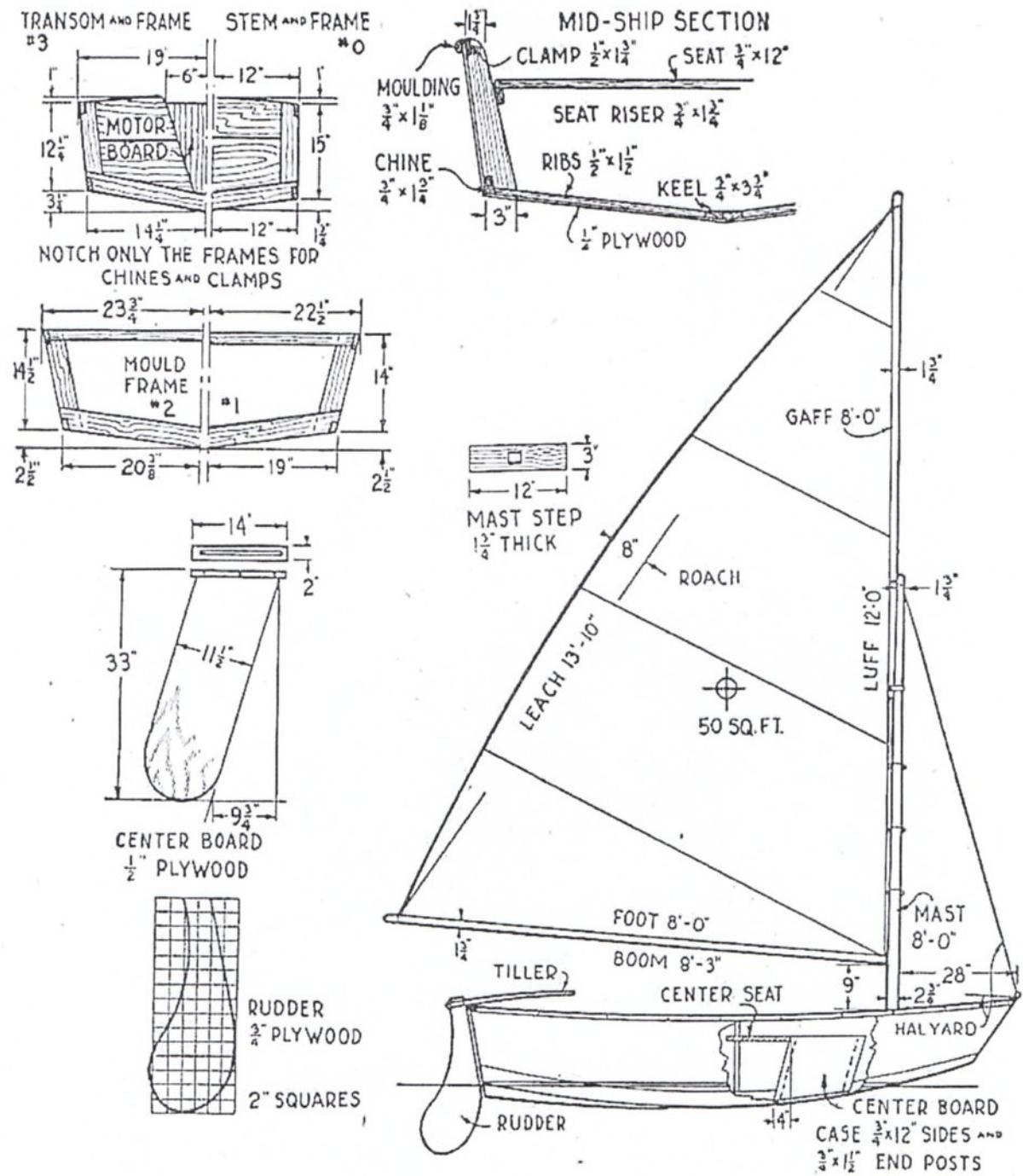
Sides of pram planked with marine plywood, and one bottom piece ready to be attached.

for the mould frames. Begin the construction by drawing full-size paper patterns of both mould frames, transom and stem. The material for these parts is simply laid upon the patterns so as to conform to outline, marked and sawed to shape. The two boards of the transom and stem are secured with a 3/4" x 3" frame, screw fastened with 1 1/4" No. 8 f. h. screws. To build a rigid sturdy craft every adjoining surface should be coated with a waterproof glue, while every fastening should have lead holes drilled to prevent weakened or split joints.

Temporarily assemble transom, stem, and mould frames, using a screw to hold each of these parts to the form. With the aid of a light batten bent around all frames mark the correct bevel each must be trimmed so planking lies evenly. Remove all frames from form and bevel edges accordingly. Before returning frames to form, cut notches for keel, chines and clamp following the angle of beveled edges. Cut notches all the way through stem and through frame only of transom. Assemble all frames on form and proceed to attach 3/4" x 3 3/4" keel using two 2" No. 10 f. h. screws to each joint. Do not fasten any parts to mould frames as these must be later removed.

The 3/4" x 1 3/4" chines are now





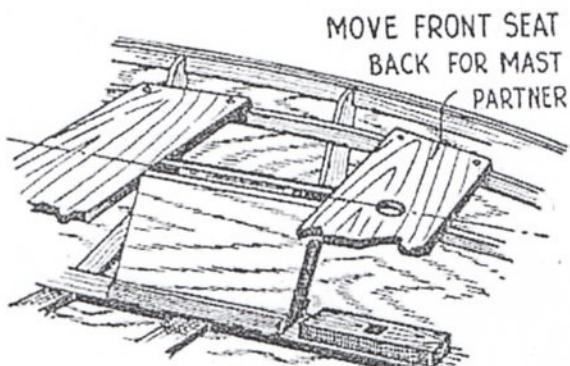
clamped in place and fastened to chine notches with one 2" No. 8 f. h. screw. The  $1\frac{1}{2}$ " x  $1\frac{3}{4}$ " clamps are next cut to fit and fastened to transom and stem notches with one  $1\frac{1}{4}$ " No. 8 f. h. screw to each joint.

#### Planking the Bottom

The planking is simply two  $\frac{1}{4}$ -in. thickness sheets of 4' x 8' marine plywood. It is best to set the joints so they fall upon bottom ribs and side frames. This conceals the joint. When fir plywood longer than eight feet can be obtained joints on side or bottom can be avoided. Before planking, trim and fair the various mem-

bers such as keel, chines, and frames so the plywood lies evenly. The bottom is applied in two pieces, the joint coming on the center of the keel. Cut one of the 4' x 8' pieces of plywood to shape, use it as a pattern, and mark the other piece. Coat keel, chines, stem, and transom with waterproof glue, clamp plywood in place and screw fasten to keel with 1" No. 8 f. h. screws, and to stem and transom with  $1\frac{1}{4}$ " No. 8 f. h. screws, spacing all fastenings about two inches apart. The remaining areas that the 8-foot lengths of plywood fail to cover are simply covered with the waste stock and fastened similarly. Trim edges along chines evenly.

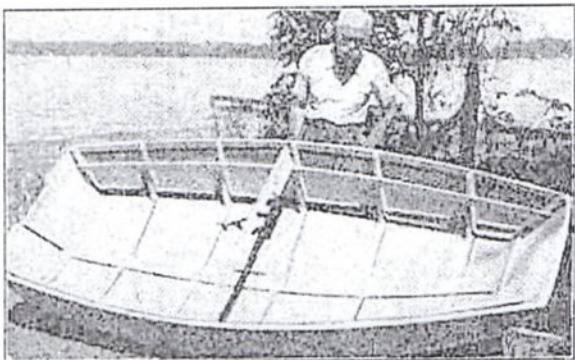
The sides are cut from the other 4' x 8' piece



DETAILS OF CENTER BOARD CASE



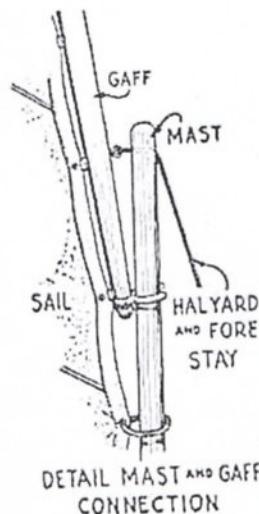
Hull is now completely enclosed.



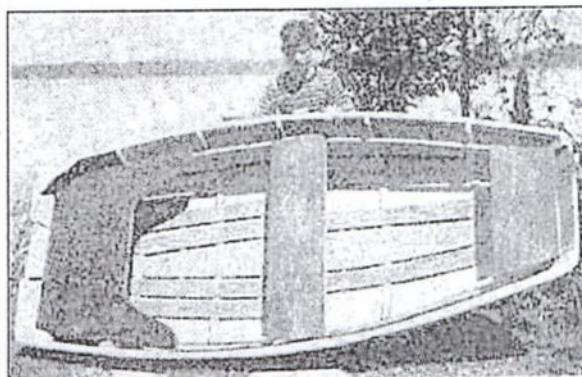
Frame finished; chines and keel attached.

of plywood, and this is clamped to sides, marked and cut to shape. Coat adjoining surfaces with casein glue, clamp pieces in place, and fasten with 1" No. 8 f. h. screws spaced two inches apart. With hull planked, remove from form and turn right side up. The  $\frac{1}{2}'' \times 1\frac{1}{2}''$  bottom ribs are now sawed to fit bottom at points indicated. The side next to the plywood is coated with glue and each rib is nailed in place with a  $1\frac{1}{4}''$  galvanized shingle nail. Drive nails from the outside and finish by clinching on inside. The side frames are cut to fit position, glued and screw fastened to sides with 1" No. 8 f. h. screws. The  $\frac{3}{4}'' \times 1\frac{3}{4}''$  seat risers are bent in place and fastened to side frames with 2" No. 10 f. h. screws. The seats are cut and fastened to seat risers with  $1\frac{1}{4}''$  No. 8 f. h. screws.

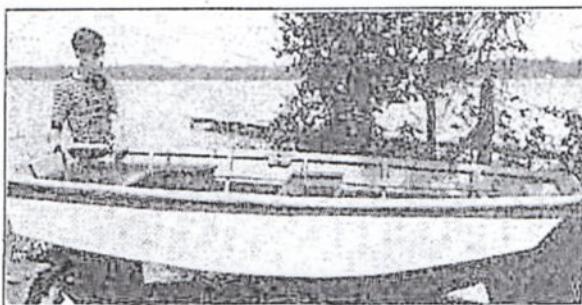
To make a thoroughly water-tight job, the entire hull should be covered with light canvas. This is applied in two 36-inch widths, tacking



even along clamp of upper edge and pulling cloth towards keel and tacking along center of keel. In addition the cloth must be cemented with canvas cement to prevent entrance of water at any point. This cement is first spread over an area of three or four square feet with a brush, the cloth stretched, tacked in place, and the surface of cloth rubbed with a pad to insure complete adhesion. The laps of cloth



An interior view of the completed boat.



All ready to take to the water at last.

are cemented together at keel and tacked.

To present a firm foundation for paint coats, thin the remainder of the cement with alcohol to the consistency of paint and apply to the canvas surface. Allow it to dry and sand it smooth. Enamel, or better yet three coats of flat paint or colors ground in oil and thinned with turpentine, is applied to the canvas surface and followed by varnish or enamel.

The inside is painted or varnished as desired. Floor boards may be made from the waste pieces of plywood and screw fastened to bottom. With the installation of oarlocks the hull is complete.

• Craft Print No. 75 in enlarged size for building the "Kingfisher" is available at 25¢ each. Address Craft Print Dept. B-48, SCIENCE AND MECHANICS, 49 East Superior St., Chicago 11, Ill.

